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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/736,616	12/17/2003	Akira Nagai	M1071.1885	4064
7590 10/06/2004				
DICKSTEIN SHAPIRO MORIN & OSHINSKY, LLP 1177 Avenue of the Americas New York, NY 10036			EXAMINER VIJAYAKUMAR, KALLAMBELLA M	
			ART UNIT 1751	PAPER NUMBER

DATE MAILED: 10/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/736,616

Applicant(s)

NAGAI ET AL.

Examiner

Kallambella Vijayakumar

Art Unit

1751

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-7,9,10,12-15 and 17-20 is/are rejected.
- 7) ☐ Claim(s) 8,11 and 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Detailed Action

- Applicant's arguments, filed 07/14/2004, with respect to the rejection(s) of claim(s) 1-20 under 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Gavin et al (US 5,782,945).
- Attempts to overcome the prior art in order to condition the application allowance over a phone call to Mr. Edward Meilmann on 09/20/2004 did not materialize in the allowance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

1. Claims 1-7, 9-10, 12-15, 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gavin et al (US Patent 5,782,945) in view of Bentem et al (US Patent 6,100,209).

Gavin et al disclose a method of making Silver tracks on glass for forming window/automobile demister/defogger by forming the bus bar at the edge of the window (Col-1, Ln: 6-13). Gavin et al further teach the forming the silver tracks by screen-printing of silver paste comprising 0-8 wt% glass frits and other components including Boron as a reducing agent. Gavin et al further teach the forming of the defogger by firing the screen-printed glass article between 540-800°C (Col-4, Ln: 20-57; Col-6, Ln: 4-14). Gavin et al teach the use of various reducing agents in the formulation of the compositions for forming the defogger heating/conductive tracks and the benefits of adding the reducing agents in the composition to improve the adhesion and color clarity of the heating elements. The amount of boron added to the Ag-paste as a reducing agent in forming the article in Example-1 would meet the content of reducing agent as molybdenum silicide in the instant claims- (1, 5, 10, 12, 15, 17) (Col-5, Ln: 9-50, Col-6, Ln: 29-57). Gavin et al further teach the printing Ag-tracks directly over the glass or printing over a layer of enamel in the fabrication of defogger. The formation of a pattern or printing parallel lines and forming bus bar in the fabrication of a window defogger would have been obvious steps in the art.

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- A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill the art, including nonpreferred embodiments. Merck & Co. v. Biocraft Laboratories, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989). See also Celeritas Technologies Ltd. v. Rockwell International Corp., 150 F.3d 1354, 1361, 47 USPQ2d 1516, 1522-23 (Fed. Cir. 1998).

Gavin et al do not disclose the particle size of the Ag-particles in the paste composition. However the use of sub-micron sized particles of Ag (0.1-5 microns) in the

paste composition of Gavin et al would have been obvious, as it was customary to use such submicron particles in the art at the time of disclosure of invention by the applicants, as disclosed in the analogous art by Bentem et al in the compositions of Ag-track-paste (Col-7, Lines: 26-35), that would meet the limitations of instant claims 7, 9, 17-19.

It would have been obvious to one with ordinary skill in the art to make obvious modifications to the composition of Ag-tracks in the fabrication of window/automobile defogger/demister of Gavin et al, by optionally using molybdenum silicide as the reducing agent in the formulation of the paste, to benefit from improved adhesion and color characteristics of the heating tracks, because Gavin et al teach such modifications and their benefits, and further optionally use the submicron size Ag-particles in the composition to benefit from improved dispersability and printing characteristics per the teachings of Bentem et al, because both the teachings are in the analogous art, and with the expectation of reasonable success in obviously arriving at the limitations of the instant claims by the applicants.

2. Claims 1-7, 9-10, 12-15, 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kano (US Patent 5,795,501) in view of Gavin et al (US Patent 5,782,945).

Kano discloses making of auto/glass defogger by screen printing of an electrically conductive composition suitable for hot-heat wires comprising of 100 parts of Ag-powder with a particle size of 0.1-5 microns, 0.5-10 parts by weight of glass frit with a softening point of less than 650°C, rhodium resinate and 1-5 parts by weight an inorganic pigment of metal oxides, dispersed in 1-40% parts by weight of an organic vehicle. Kano further

teaches printing of the parallel stripes of conductive patterns on the glass and connecting the ends of the stripes to the bus bars at the end of the window glass and baking the coated glass forming the defogger/defroster on the glass, and further incorporating the defogger in to an automobile would be an obvious step of the process (Col-2, Lines: 11-51; Col-3, Lines: 27-49; Col-4, Line-27-Col-5, Line-38).

Kano teaches all the limitations of the instant claims of making the window/automobile-window-glass-defoggers by the applicants, but does not disclose the use of Molybdenum compounds such as molybdenum silicide or molybdenum boride in the electrode/conductive/resistive paste for making the window defogger/defroster.

The disclosure on the making of the defogger and the composition of the Ag-paste by Gavin et al is set forth as in Rejection-1. Gavin et al teach the benefits of adding reducing agents to the paste formulations used for making the defogger, while the reducing agents included boron and molybdenum silicide (Col-5, Line-9 to Col-6, Line-57). Further the amount of boron as reducing agent added to the Ag-paste in Example-1, is almost identical to that claimed by the applicants in the instant claims 5, 12 and 17.

It would have been obvious to one with ordinary skill in the art to make obvious modifications to the composition of Ag-paste of Kano by optionally including a reducing agent such as molybdenum silicide in the making of auto/window defogger and vary its content per the teachings of Gavin et al to benefit from the improved adhesion, color characteristics and invisibility of the tracks, because Gavin et al teach such modifications, and both the teachings are in the analogous art, and with the expectation of reasonable success in obviously arriving at the limitations of the instant claims by the applicants.

Allowable Subject Matter

Claims 8, 11, and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Prior art of record neither teaches nor fairly suggestive of making a window/automobile defogger/demister by printing an Ag-paste containing molybdenum boride as a reducing agent.

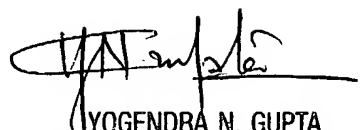
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kallambella Vijayakumar whose telephone number is 571-272-1324. The examiner can normally be reached on M-Th, 07.00 - 16.30 hrs, Alt. Fri: 07.00-15.30 hrs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Yogendra Gupta can be reached on 571-272-1316. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KMV
October 01, 2004.


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SUPERVISORY PATENT EXAMINER
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